

Claims

- [1] A centrifuge comprising: a centrifugal device having buckets, a rotor, and a chamber; a drive unit to drive the rotor; a controller to control the drive unit; a power supply to supply power to the drive unit and the controller; and a case having a door to open or close the chamber of the centrifugal device, further comprising:
a pump device having an air pump mounted in the case for vacuum and compression, and valves connected to the air pump and adapted to be automatically opened or closed to selectively perform vacuum or compression, the pump device being controlled by the controller; and
a connector formed at a side of the case to connect the pump device with an external unit for performing vacuum and compression.
- [2] The apparatus as set forth in claim 1, further comprising:
pressure adjustors provided between the air pump and the connector of the case and adapted to adjust the level of a pressure for allowing liposuction and lipoinjection processes to be performed at a constant pressure.
- [3] The apparatus as set forth in claim 1, further comprising:
speed adjustors provided in press lines between the air pump and the connector of the case and adapted to adjust the flow rate of air in consideration of the skill of an operator and body regions where the liposuction and lipoinjection operations are performed.
- [4] A method of performing liposuction and lipoinjection using a centrifuge comprising: a centrifugal device having buckets, a rotor, and a chamber; a drive unit to drive the rotor; a case having a door to open or close the chamber of the centrifugal device; a pump device having an air pump mounted in the case for vacuum and compression, and valves connected to the air pump and adapted to be automatically opened or closed to selectively perform vacuum or compression, the valves including first to fifth valves; a controller to control the drive unit and the pump device; a power supply to supply power to the drive unit and the controller; and a connector formed at a side of the case to connect the pump device with an external unit for performing vacuum and compression, the method comprising:
performing a liposuction process by inserting a cannula into an incision and activating a first foot switch to open the first and fifth valves and to operate the air pump, applying vacuum to the external unit for liposuction;
performing a centrifugation process by mounting a syringe, that is filled with suctioned fat, and operating the centrifugal device to centrifugally obtain pure

fat; and

performing a lipoinjection process by activating a second foot switch to open the second and fifth valves and to operate the air pump to thereby supply air into the external unit, allowing the pure fat inside the external unit to be injected into subcutaneous fat layers, or by activating a third foot switch to open the third and fifth valves and to operate the air pump to thereby supply air into the external unit, allowing the pure fat inside the external unit to be injected into muscularis, wherein, prior to performing the processes, the method further comprises removing air remaining in lines between the connector of the case and the air pump by opening the valves by means of the controller at a time when the centrifuge is turned on upon receiving power from the power supply.

[5] The method as set forth in claim 4, further comprising:
closing the valves and stopping the operation of the air pump if the controller detects an overpressure beyond a predetermined value during vacuum or compression.

[6] The method as set forth in claim 4 or 5, further comprising:
removing a residual pressure inside the external unit by opening the valves after vacuum or compression is completed.